

EXHIBIT F

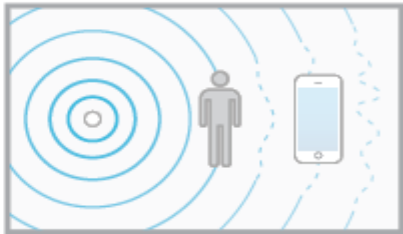
United States Patent No. 10,477,994 (Cisco)

US Patent No. 10,477,994 B2	CiscoWave 2 Access Points
8. A method in a beaconing data processing system, the method comprising:	<i>CiscoWave 2 Access Points are a “beaconing data processing system”.</i>
<p>one or more processors periodically beaconing outbound a broadcast unidirectional wireless data record communicated through a Bluetooth communications interface of the beaconing data processing system to serve as a physical location reference contributing to physical location determination processing of one or more user carried mobile data processing systems in a Bluetooth wave spectrum range vicinity of the beaconing data processing system, the beaconing data processing system:</p>	<p>Managing BLE Beacons in Cisco Wave 2 and 802.11ax Access Points</p> <p>The BLE Management feature supports both sending of beacons and listening to beacons from small battery-powered devices.</p> <p>BLE beacons support the following profiles:</p> <ul style="list-style-type: none"> • iBeacon profile • Eddystone-URL profile • Eddystone-UID profile • viBeacon (contains up to 5 iBeacons internally) <p>Bluetooth-enabled smartphones that are nearby can pick up the transmission from beacons and communicate with the back-end server to push advertisements or other information. The transmission power range is from -21 dBm to +5 dBm in increments of 3 dB. You can also configure the broadcast frequency in the range of 100 milliseconds to 10000 milliseconds.</p> <p>https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/16-12/config-guide/b_wl_16_12_cg/ble-beacon.html</p> <p>The AP's BLE firmware supports the following beaconing profiles:</p> <ul style="list-style-type: none"> • iBeacon: This is Apple's iBeacon broadcast format. In this profile, you can configure the following broadcast data: <ul style="list-style-type: none"> • UUID (16 bytes value, which can uniquely identify an organization) • Major number (2 bytes value, which can identify a unique store of the organization) • Minor number (2 bytes value, which can identify a particular product or section) <p>Typical use cases are iOS or Android apps that use Major, Minor, or UUID to show local store data to smartphone user, when they walk close to a Cisco Wave 2 or Catalyst AP.</p>

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	<p>https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/16-12/config-guide/b_wl_16_12_cg/ble-beacon.html</p> <p>The iBeacon Prefix contains the hex data : 0x0201061AFF004C0215. This breaks down as follows:</p> <ul style="list-style-type: none"> • 0x020106 defines the advertising packet as BLE General Discoverable and BR/EDR high-speed incompatible. Effectively it says this is only broadcasting, not connecting. • 0x1AFF says the following data is 26 bytes long and is Manufacturer Specific Data. • 0x004C is Apple's Bluetooth Sig ID and is the part of this spec that makes it Apple-dependent. • 0x02 is a secondary ID that denotes a proximity beacon, which is used by all iBeacons. • 0x15 defines the remaining length to be 21 bytes (16+2+2+1). <p>https://os.mbed.com/blog/entry/BLE-Beacons-URIBeacon-AltBeacons-iBeacon/</p>
not soliciting an inbound communication to the beaconing data processing system from the one or more user carried mobile data processing systems in response to a receipt of the broadcast unidirectional wireless data record in the one or more user carried mobile data processing systems, and	<p>The iBeacon Prefix contains the hex data : 0x0201061AFF004C0215. This breaks down as follows:</p> <ul style="list-style-type: none"> • 0x020106 defines the advertising packet as BLE General Discoverable and BR/EDR high-speed incompatible. Effectively it says this is only broadcasting, not connecting. • 0x1AFF says the following data is 26 bytes long and is Manufacturer Specific Data. • 0x004C is Apple's Bluetooth Sig ID and is the part of this spec that makes it Apple-dependent. • 0x02 is a secondary ID that denotes a proximity beacon, which is used by all iBeacons. • 0x15 defines the remaining length to be 21 bytes (16+2+2+1). <p>https://os.mbed.com/blog/entry/BLE-Beacons-URIBeacon-AltBeacons-iBeacon/</p>

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<p>not configured to process inbound communications resulting from the receipt of the broadcast unidirectional wireless data record in the one or more user carried mobile data processing systems, the broadcast unidirectional wireless data record communicated through the Bluetooth communications interface to serve as the physical location reference including:</p>	<p>Q: Does using iBeacon technology put user's private data at risk? A: iBeacon advertisements only contain UUID, major and minor values. This is a unidirectional broadcasting; there is no bidirectional communication between a beacon device and an iOS device via iBeacon technology, therefore iBeacon technology cannot be used to receive by a beacon to receive information from a user. What an app does in response to a notification triggered by an iBeacon advertisement is a separate matter, but this is no different from using existing geofencing technologies.</p> <p>Apple, "Getting Started with iBeacon", Version 1.0 (June 2, 2014), downloaded from https://developer.apple.com/ibeacon/Getting-Started-with-iBeacon.pdf on Oct. 26, 2020</p>
<p>no physical location coordinates of the beaconing data processing system,</p>	<p>Region Monitoring Similar to the existing geofence region monitoring, an application can request notifications when a device enters or leaves a region defined by a beacon. When an application makes this request to begin monitoring a beacon region it must specify the UUID of the iBeacon advertisement. While an app is limited to 20 regions being monitored, by using a single UUID in multiple locations, a device can easily monitor many physical locations simultaneously. Using the retail store example shown in the table earlier, a device can monitor 3 separate physical locations (San Francisco, Paris, and London) using the same UUID. The impact of this UUID-based approach compared to geofences cannot be understated: with a single line of code an application can establish monitored regions around an arbitrary number of objects or locations.</p>  <p><i>Figure 4: Human bodies can also block signals.</i></p> <p>Apple, "Getting Started with iBeacon", Version 1.0 (June 2, 2014), downloaded from https://developer.apple.com/ibeacon/Getting-Started-with-iBeacon.pdf on Oct. 26, 2020</p> <p>"Conceptually, this is what we were...would like to achieve is...just specify that whenever I'm inside of Jay's, I'd</p>

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	<p>like to know that I'm inside of Jay's. And so, to set out to build this, we...the CoreLocation Team first looked at the actual physical store. And inside every store, there is a glowing employee sitting behind the counter saying, "Welcome to Jay's. Have a doughnut." So, when we looked to build something in the virtual work around this, we wanted something that approximated this behavior. And, we noticed that a lot of stores already are switching their cash registers to iPads. So, wouldn't it be nice if there was a way for your iPad to communicate with your customer's iPhone to tell them their inside a Jay's Doughnut Shop and for your application inside their phone to pick up and give them an immersive experience? Wouldn't it be even better if instead of saying, "You're inside of Jay's", to actually be able to encode some extra information like, "Like, you're inside of the Cupertino store. Try an Apple fritter." So, this is what we set out to build. And, to do this, we came up with a concept that we're calling iBeacons. And so, with an iBeacon, take a Bluetooth device, like an iPad. And, if we set a field around, if we start advertising a particular packet from that Bluetooth device and if we, we, we can basically end up creating a field around the device that is roughly a circle. And, if a customer walked by the store or entered the store with its own iPhone., our iPhone could see this Bluetooth low energy field and know that I'm inside the store and change its behavior based on that. And similarly, when the user leaves that store, we could know this and we could give you...we could have an exit notification as well. And, this allows you to build context around multiple placed. You know, any Jay's store is roughly equivalent because each one has a beacon. It doesn't matter where it is in the world."</p> <p>https://developer.apple.com/videos/play/wwdc2013/307/ at [28:17 – 30:20] (accessed at Feb. 15, 2021)</p>

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a data field containing a signal strength of the beaconing data processing system, and

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Table 2-1 Proximity Beacon Advertising Packet

Byte(s)	Name	Value	Notes
0	Flags[0]	0x02	See <i>Bluetooth 4.0 Core Specification</i> , Volume 3, Appendix C, 18.1.
1	Flags[1]	0x01	See <i>Bluetooth 4.0 Core Specification</i> , Volume 3, Appendix C, 18.1.
2	Flags[2]	0x06	See <i>Bluetooth 4.0 Core Specification</i> , Volume 3, Appendix C, 18.1.
3	Length	0x1A	See <i>Bluetooth 4.0 Core Specification</i>
4	Type	0xFF	See <i>Bluetooth 4.0 Core Specification</i>

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2. Proximity Beacon

2.2 Measured Power

Byte(s)	Name	Value	Notes
5	Company ID[0]	0x4C	Must not be used for any purposes not specified by Apple.
6	Company ID[1]	0x00	Must not be used for any purposes not specified by Apple.
7	Beacon Type[0]	0x02	Must be set to 0x02 for all Proximity Beacons
8	Beacon Type[1]	0x15	Must be set to 0x15 for all Proximity Beacons
9-24	Proximity UUID	0xnn..nn	See <i>CLBeaconRegion</i> class in iOS Developer Library. Must not be set to all 0s.
25-26	Major	0xnnnn	See <i>CLBeaconRegion</i> class in iOS Developer Library. 0x0000 = unset.
27-28	Minor	0xnnnn	See <i>CLBeaconRegion</i> class in iOS Developer Library. 0x0000 = unset.
29	Measured Power	0xnn	See Measured Power (page 7)

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	Apple, Inc., Proximity Beacon Specification (Release R1 2015).
application identifier data stored in a memory of the beaoning data processing system.	<div><p>iBeacon Packet Content</p><p>The diagram illustrates the structure of an iBeacon packet. It is composed of four main sections: Preamble (1 byte), Access Address (4 bytes, fixed to 0x8E89BED6), PDU (2-39 bytes), and CRC (3 bytes). The PDU section is further divided into three parts: Header (2 bytes), MAC Address (6 bytes), and Data (up to 31 bytes). The Data section is subdivided into three parts: iBeacon Prefix (9 bytes, highlighted with a green box and fixed to 02 01 06 1A FF 4C 00 02 15), Proximity UUID (16 bytes), and TX Power (2 bytes, which is the 2's complement of the measured TX power at 1 meter). The Proximity UUID is further divided into Major (2 bytes) and Minor (2 bytes) fields, each with 32768 possible values.</p></div> <p>The “application identifier data” is the iBeacon prefix (0x0201061AFF4C000215).</p>